

***The following articles are all from the National Ag Safety Database**

Animal Handling Safety

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Animals are handled daily on nearly half of New York farms. In the Northeast, animal handling mishaps rank second in reported farm accidents. Every year at least one New York farmer dies as a direct result of a confrontation with a farm animal. An understanding of animal behavior is essential to preventing these accidents. Handlers must be aware of how animals react to different situations and know how to avoid or control potentially dangerous predicaments.

Animal Characteristics

Smell, Hearing, Sight

Most livestock rely heavily on their senses of smell, hearing, and to a lesser extent, sight. The sense of smell is particularly important to animals, and they will often react to odors that people cannot detect. Cattle may be lured by the smell of freshly mown hay, or a bull may become aggressive if he detects a cow in heat. Odors can trigger defensive reactions in livestock, especially females with newborns. Animals have extremely sensitive hearing. They hear high-pitched sounds better than humans and loud high-pitched noises often frighten or excite them.

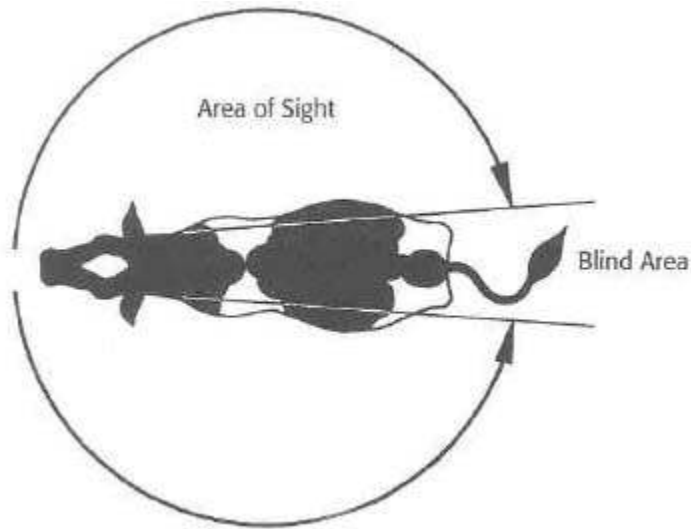
Cattle and sheep see objects in black and white. Cattle have a panoramic field of vision, which means they can see everything around them except what is directly behind their hindquarters. If approached from the rear, they may be startled. Cattle have limited depth perception and judge distance poorly. Shadows may appear as holes, so they sometimes balk at sharp contrasts in light. Chute and alley walls should have flat surfaces to minimize this reaction. Diffuse lighting, which reduces bright spots and shadows, helps quiet animals. Livestock move more comfortably from dark to light areas than the reverse.

Behavior

People who regularly work with livestock realize that each animal has its own personality, however, certain animal behaviors are predictable.

- Most animals respond to calm, gentle, and consistent handling.
- Livestock become uneasy or skittish when their ordinary routines or familiar surroundings change.
- Animals have a definite social order. Dominant animals have first choice of feed, location, and direction of travel. Crowding a subordinate animal against a dominant one during handling may disrupt their social structure and cause an unpredictable and dangerous response.
- Domestic livestock, especially cattle and sheep, are herd animals. They may become agitated or stressed when isolated and will try to return to the group.
- Livestock detect people by their movement, which is much more important to animals than what is moving, or the location, color, or identity of the moving object. A handler's excited or aggressive movements may cause animals to stop and watch the activity rather than respond to the handling. Therefore, it is important to move calmly and steadily when handling animals.

An animal's gender and breed also affect its behavior. Because of their weight, strength, and inconsistent temperament, bulls, in particular, require extra caution and consideration. Even a bull's playful activity can easily injure or kill a person. Bulls require special facilities that allow them to feed, drink, exercise, and breed without direct contact with handlers. Females can be as dangerous as bulls when their young are threatened.



Hazards and Precautions

Physical Injuries

There are four common types of animal handling injuries:

- Animal steps on handler
- Animal slips and falls on handler
- Animal pins or squeezes handler against a barrier
- Animal kicks handler

By employing practical experience and adhering to a few general rules, handlers can prevent most accidents and injuries.

- Move calmly, deliberately, and patiently. Avoid quick movements or loud noises that may startle animals.
- Do not alter the daily routine or the animals' living conditions. Animals often balk at anything out of the ordinary.
- Always leave an escape route when working in close quarters with animals.
- Avoid startling an animal. Make it aware of your approach before getting too close to it.

Transmittable Diseases

All animals, domesticated or wild, can be sources of human illness and parasitic infection. Diseases that can be transmitted from animals to humans are known as zoonoses. Infections may result from direct or indirect contact with diseased animals, their manure, their urine, and their bedding, or through animal products (milk, meat, hides, hair).

Infection may take the form of intestinal diseases, respiratory disorders, general ill health, or skin rashes. Table I lists the most common transmittable diseases.

Personal Protective Equipment

Handlers can protect themselves from injury by wearing appropriate safety equipment, which is simple to use and reasonably priced. Foot injuries are common when handling any type of livestock. Sturdy steel-toed shoes will protect feet if they are stepped on. Boots should have nonskid soles to prevent falls when working in slick areas.

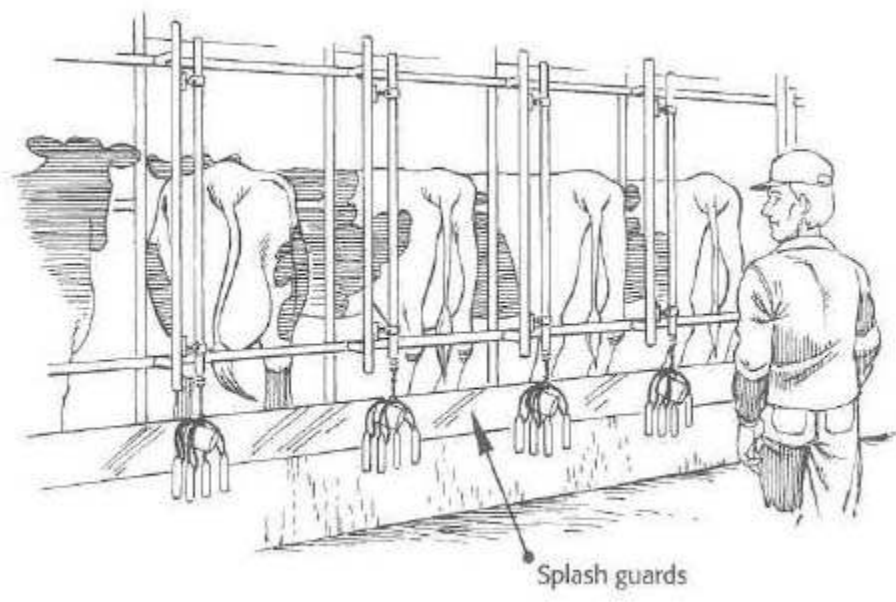


Table 1. Transmittable Diseases and Their Prevention

Disease	Route of Transmission	Symptoms in Humans	Safeguards (Prevention)
Rabies	Transmitted by the saliva of infected animal through a bite, open wound, or sore.	This disease attacks the central nervous system. Symptoms include headache, irritability, fever, and excess salivation. As the disease progresses, other symptoms include spastic skeletal muscle contractions, convulsions, respiratory failure, and eventual death.	Refrain from handling small animals around the farm, unless they are immunized. Wear gloves when feeding calves and when treating sick animals.
Brucellosis (Bang's Disease)	Transmitted to humans in raw (unprocessed) milk, aborted fetuses or afterbirth from an infected animal, or from an infected carcass at time of slaughter.	The acute stage mimics influenza (high fever, chills, body aches), fatigue, night sweats, Headaches and occasionally diarrhea, weight loss, and irritability.	Good sanitation reduces the chance that the herd will be infected.
Q Fever	Inhaled from surroundings contaminated by animals that excrete the organism with uterine discharges and placentas.	Acute fever, headache, and weakness following an incubation period of 2-4 weeks. Productive cough (phlegm) and chest pain is common.	High risk livestock should be vaccinated. Good sanitation reduces the possibility of contracting this disease.
Leptospirosis	Transmitted to humans from contact with animal urine.	Chills, fever, body aches, nausea, vomiting, jaundice, skin rash, stiff neck, and muscle tenderness commonly found in lower legs, thighs, and lumbar areas.	Milking parlors should have splash guards in place to prevent contact.
Ringworm	Transmitted by direct contact with infected animal.	Ringworm is a fungal infection. It is characterized by raised, reddened areas that form small, round circles.	Proper sanitation after handling helps to prevent this disease.
Salmonellosis	Transmitted through contaminated feed or water from wild or domestic animals and poultry.	Severe gastrointestinal distress (nausea, vomiting, diarrhea, and abdominal pain) and fever.	Good sanitation and proper storage, handling, and cooking of animal-derived foods will reduce the risk of poisoning.
Trichinosis	Transmitted by consumption of uncooked or partially cooked pork.	This parasite can be painful and sometimes fatal to humans. Gastrointestinal disorder (nausea,	Always thoroughly cook pork to prevent this disease.

		vomiting, diarrhea, and abdominal pain) are early symptoms. As the disease progresses, it migrates into the muscle tissue and causes muscular weakness.	
Lyme Disease	Transmission normally occurs through the bite of a deer tick.	Symptoms usually develop within 2-30 days of the tick bite. A small red bump may appear near the bite and enlarge into a spreading red ring. This is followed by general illness including fever, chills, headache, and backache. Palpitations, dizziness, and shortness of breath may also occur. Untreated cases may advance into rheumatoid, arthritic, or cardiac problems.	Exposed skin should be protected. Pants should be tucked into socks. Examine skin carefully after possible exposure. Antibiotics can be successful during the early stages of this disease.

To protect against contracting or transmitting diseases through skin contact, handlers should wear disposable rubber latex gloves when treating sick animals or assisting with births.

A dust mask, preferably one carrying the NIOSH approval #TC-21C prefix, should be worn when working in dusty conditions. Repeated and prolonged exposure to agricultural dusts can cause short-term reactions and lead to respiratory diseases such as "farmer's lung."



Handling Farm Animals Safely

Farm Safety Association

Regardless of the types of animals you raise on your farm, complacency and the feeling of being safe in their presence may leave you off guard. Injuries usually occur when the victim does not expect it and all animals should be considered unpredictable. A lack of knowledge of animal behavior could put a handler into dangerous situations. Thousands of animal related injuries occur each year, some even resulting in death. Don't overlook the importance of safety around livestock, particularly with inexperienced employees and family members.

Some of the most common injuries include being stepped on by large animals, being knocked down, kicked, thrown while riding, or pinned between the animal and a hard surface. Many injuries also occur each year from bites.



FACILITIES AND EQUIPMENT

What can you do to prevent animal injuries? Proper equipment and handling facilities for your type of operation are a must. Larger animals, in particular need equipment that is able to restrain them for general maintenance or health care.

Pens should be equipped with a man-gate or other means egress if necessary. Crowding animals into sorting or working chutes should be done with crowd gates, not with drivers.

Catwalks along chutes and alleys eliminate the need for working in the alley. If the catwalk is more than 18" or so off the ground, it should be protected by a guardrail to prevent falls.

Walking or working surfaces should be free of tripping and slipping hazards for both animals and workers. Eliminate protrusions and sharp corners. Lighting in handling and housing facilities should be even and diffused. Bright spots mixed with shadows in alleys and crowding pens will often cause cattle to balk. Guard the moving parts of a hydraulically operated squeeze chute and tilt table. Use solid panels for moving swine.

Loading ramps and handling chutes ideally should have solid side- walls to prevent animals from seeing outside distractions with their wide-angle vision. Blocking vision will also help stop escape attempts. Sight reduction also lowers stress levels, thus having a calming effect on the animal.

Pigs, sheep, and cattle have a tendency to move from a dimly lit area to a more brightly-lit area, provided the light does not hit them directly in the eyes. A spotlight directed on the ramp will often help keep the animals moving.

Loud, abrupt noises, such as the sound of banging metal can cause distress in livestock. You may wish to install rubber bumpers on gates and squeeze chutes to reduce noises.

The sense of smell is extremely important to animals, especially between females and newborns. Often animals react to odors we do not detect. For example, sheep may be lured by the smell of freshly mown hay or a bull may become aggressive when he detects a cow in heat.

Handling facilities should be painted in one color only, since all species of livestock are likely to balk at a sudden change in color or texture.

All livestock tend to refuse to walk over a drain, grate, hose, puddle, shadow, or any change in flooring texture or surface. All these factors need to be considered when evaluating or planning livestock handling facilities. To reduce the risk of falls, provide slip-resistant footing for workers and livestock with roughened concrete ramp and floor surfaces.

UNDERSTAND ANIMAL BEHAVIOR

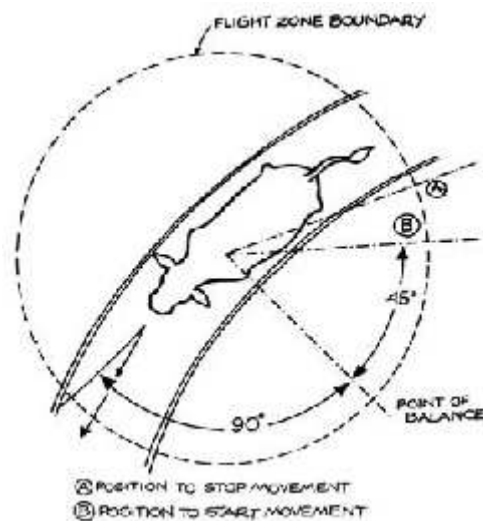
- Animals experience hunger, thirst, fear, sickness, injury and strong maternal instincts. They also develop individual behavior patterns such as kicking or biting. The handler should be aware of these behaviors and take necessary safety precautions, include using personal protective equipment.
- Beef, swine and dairy cattle are generally colorblind and have poor depth perception. This results in an extreme sensitivity to contrasts, which may cause an animal to balk at shadows or rapid changes from light to dark. Sheep are also considered colorblind, but do have good depth perception. Instead, Sheep have difficulty picking out small details, such as the open space created by a partially opened gate.
- Horses and Mules commonly kick toward their hindquarters, while cow's kick forward and out to the side. Cows also have a tendency to kick toward a side with pain from inflammation or injuries. For example, if a dairy cow is suffering from mastitis in one quarter, consider approaching her from the side of the non-affected udder.
- Livestock with young exhibit a maternal instinct. They are usually more defensive and difficult to handle. When possible, let the young stay as close to the adult as possible when handling. Most animals have a strong territorial instinct and develop a very distinctive, comfortable attachment to areas such as pastures and buildings, water troughs, worn paths and feed bunks. Forcible removal from these areas can cause animals to react unexpectedly.

Considering these animal traits, it is easy to understand why animals often hesitate when going through unfamiliar gates, barn doors, and handling and loading chutes. Similar problems occur when animals are moved away from feed, separated from the herd or approached by an unfamiliar person.

- Moving or flapping objects can also disrupt handling. A cloth or coat swinging in the wind or turning fan blades can cause animals to balk. Movement at the end of a chute can cause them to refuse to be herded.
- Yelling should be kept to a minimum when working with livestock to enable the animal to feel secure.
- Be cautious around animals that are blind or deaf on one side. They favor that side and can suddenly swing around to investigate disturbances. If standing too close, a person could easily be knocked down and trampled.
- Animals respond to the way they are treated and draw upon past experiences when reacting to a situation. For example, animals that are chased, slapped, kicked, hit or frightened when young will naturally fear being approached.

PERSONAL PROTECTIVE EQUIPMENT

- Personal Protective Equipment appropriate to the work situation should be worn. This could include safety glasses, gloves, long trousers, steel-toed shoes or boots, shin guards and a hard hat. It is also important to wear the proper footwear when around livestock. Footwear that supplies the proper foot support and protection is essential. For instance, one misplaced hoof of a 1500-pound cow can easily break the bones of the human foot encased in a pair of running shoes.
- Wear rubber gloves when working with sick and injured animals as well as other protective clothing for protection. Practice personal hygiene by washing your hands and face after handling animals



CONTROLLING DISEASES

Handlers should also be concerned with zoonotic diseases, which are illnesses that can be transmitted between humans and animals. Leptospirosis, rabies, brucellosis, salmonellosis and ringworm are especially important.

- To reduce exposure to disease, use basic hygiene and sanitation practices, which include prompt treating or disposal of infected animals, adequate disposal of infected tissues, proper cleaning of contaminated sites, and proper use of personal protective equipment

ANIMAL APPROACH

The proper approach to a large animal is critical to working with them safely. Most large animals can see at wide angles around them, but there is a blind spot directly behind their hindquarters beyond which they cannot see.

- Any movement in this "blind spot" will make the animal uneasy and nervous.
- The safest approach is to "announce" your approach through a touch to their front or side. (See figure 1)
- Most large animals will kick in an arch beginning toward the front and moving toward the back. Avoid this kicking region when approaching the animal (See figure 2)
- A frightened cow or horse will plow right over you. It is safer to use proper handling facilities made specially for separating large animals. Most animals will be more cooperative in moving through a chute that has minimal distractions.
- When you are inside a handling facility or milking lane, always leave yourself a way to get out if it becomes necessary. Try to avoid entering a small area enclosed with large animals unless it is equipped with a mangate that you can get to easily. Never prod animals if they have no place to go.

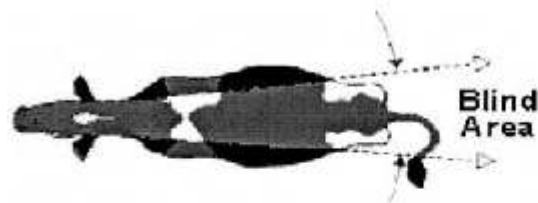


Figure 1



Figure 2

HOUSEKEEPING

- Keeping your work area clean and free of debris will help provide a safe working environment. Check for and eliminate any sharp corners or protrusions in walkways. Check to ensure that all latches and levers can't fly open easily. Clean concrete ramps and floors regularly to prevent slips and trips. Keep pitchforks and other sharp tools stored properly out of walkways



CATTLE

- Accidents with beef cattle tend to occur while the victim is handling the livestock. Beef cattle are known for an even disposition, but can be startled, and inflict injury to anyone in their way. Groups of animals are easy to "spook." Bovines can see nearly 360 degrees without moving their heads. Therefore, a quick movement behind is just as apt to "set them off" as a frontal one.
- Dairy cows may look contented in the pasture, but they are generally more nervous than other animals. Creatures of habit, they are easily startled, especially by strange noises and persons.
- Always announce your presence when approaching a cow. Gently touch the animal rather than let the first contact be a bump or shove.
- When moving cows into a constraining space such as a milking parlor stall or squeeze chute, give them time to adjust before starting the work at hand.
- If a cow tends to kick, consider using a hobble. Don't permit workers to talk loudly, clatter and bang equipment around or handle cows roughly. Gentle cows can become dangerous when defending calves and this fact should be impressed to children, visitors and new workers.
- Special facilities should be provided so that a bull can be fed, watered, exercised and used for breeding without the handler coming into direct contact with him.
- Once you have moved dairy cattle into the milking stalls, give them a moment to adapt to the new environment before beginning your operation. Although cattle are not apt to attack you, they can overwhelm you with their size and weight. Leave yourself an "out" when trying to corner or work with cattle.
- Keep small children and strangers out. Beware of the area in front of the rear leg when working with cattle. They tend to kick forward, then back. Pulling the kicking leg forward can be used as a means of preventing a kick while working in the udder or flank area range.



SWINE

- Though hogs are not normally aggressive animals, they can become dangerous animals if threatened, especially sows protecting her young.
- The best method by which to move hogs is by guiding them with gates and/or panels.
- Veterinary work and treatment of pigs should be done only when they are separated from the sow, or when she is restrained in the crate or a separate pen.
- Your best safety aid for the jobs is a lightweight hurdle or solid panel with a handle attached. The panel should be slightly narrower than the alleys through which the animals are being driven.
- As with most animals, make yourself known quietly and gently to avoid startling your hogs. A knock on the door or rattling the door handle will usually suffice.
- Don't let small children reach through pens or fences to pet or feed hogs. Keep unauthorized people out of pens or away from the facility altogether. Bio security can be an important issue.

BASIC HORSE BEHAVIOR

- Horses detect danger through their vision, sense of smell and keen sense of hearing. They have wide-angle vision, but they also have blind spots directly behind and in front of themselves

For example, when it lifts its head and pricks its ears, it is focusing on something far away. The horse lowers its head when focusing on low, close objects. Keep these blind spots in mind and know where your horse's attention is focused so you do not scare it.

- Your horse's ears will give you clues; they will point in the direction in which its attention is focused. Ears that are "laid back," or flattened backward, warn you that the horse is getting ready to kick or bite.
- Always work with calm but deliberate movements around horses. Nervous handlers can make horses nervous, creating unsafe situations.

APPROACHING THE HORSE

- When catching a horse, approach from its left shoulder. Move slowly but confidently, speaking to the horse as you approach. Read the horse's intention by watching its body language.
- Be careful when approaching a horse that is preoccupied, such as when its head is in a hay manger.
- When approaching a horse in a stall, speak to the horse to get its attention and wait until it turns and faces you before entering and make sure the horse moves over before you walk in beside it.
- Speak to your horse and keep your hands on it when moving around it. Even if a horse is aware of your presence, it can be startled by quick movements.
- When approaching from the rear, advance at an angle speaking to the horse, making sure you have its attention. Touch it gently as you pass by its hindquarters.

LEADING THE HORSE

- Hold the lead line with your right hand, 8 to 10 inches away from the horse's head, while holding the end, or bight, of the line with your left hand. Always use a lead line so you have this "safety zone" and to prevent getting a hand caught in the halter.
- Teach your horse to walk beside you so that you are walking at its left shoulder, with your right elbow near the horse's shoulder so you can anticipate its actions.

Do not let the horse "walk" you. Do not allow it to get behind you either, as it could jump into you if spooked.

- To lead a horse through a doorway, you should step through first, then quickly step to the side out of the horse's way. Keep an eye on it, as some horses try to rush through narrow spaces.
- Never wrap any piece of equipment attached to a horse around your hand, even with small loops, as it could wrap around the hand and cause serious injury.
- After you remove the halter, make the horse stand quietly for several seconds before letting it go completely. This will help prevent the horse from developing a habit of bolting away and kicking at you in the process.
- Some horses can become sour and begin nipping at you if they anticipate discomfort during grooming. Do not hurry the grooming procedure, especially with a young or spooky horse. Stay near the horse and keep a hand on it at all times so you can anticipate its movements.
- Do not climb over or under the lead line of a tied horse. The horse may pull back and cause you to trip over the line, and you will have no quick escape should the horse lunge forward, paw or try to bite. Never walk under the belly of any horse.

SHEEP

- A common accident involving sheep is being butted by a ram. Ewes will also protect their young and should be handled carefully. A sheep can be immobilized for safe handling by sitting it up on its rump and the ground.

Safety With Animals

University of Minnesota

Old MacDonald had a farm . . . e-i, e-i, ooohhh. And on that farm he had a virtual menagerie of four-legged and feathered friends. But modern agricultural specialization has changed all that. Now, if we're into animals, we're usually in big and stick to one or two kinds--Old MacDonald type operations though fondly remembered are few and far between.

Animals have been entwined in agriculture since primitive times. Being both fond of and dependent on them, we dislike viewing them as potentially dangerous. But, accident figures show that animals are involved in many thousands of farm injuries and several deaths each year. Therefore, preventing animal-related accidents is an important part of agricultural safety.

The Accident Problem

A recent summary of farm accidents data from 15 states shows that animals were a factor in about one of every eight injuries reported, ranking second to farm machinery in total number of cases. However, animal-related injuries on the average are less severe than those involving machinery with fewer than 100 resulting in death each year. Still, many animal related injuries are serious and involve considerable loss of time, money and productivity.

A closer look at animal related injuries from farm accident survey data indicate that most of the victims were males when it came to cattle and hogs, but females approached males in the number of injuries involving horses and pets.

As to age of victim, youngsters (5- 14) were most often bitten by dogs, but cow-related accidents found more victims among the 45-64 age group. Horse-related injuries were suffered most often by youngsters (5-14) and young adults (15-24) while the mature folks (25-44, 45-64) were the target of most mishaps involving hogs.

Most of the cattle and hog-related injuries were suffered in farm buildings or adjacent lots. Most with horses happened outside in barnyards, fields, lanes, woods and along public roads. Dogs more often than not bit people in home yards.

Common things cows did to hurt people were to kick or step on them, and catch people or their limbs between themselves and hard objects or surfaces. Many falls also occurred while tending cows. Hogs bit, stepped on and knocked people down. Dog bites were a common source of injury. Accidents involving horses and bulls were more likely to result in serious injury than mishaps with other animals.

Importantly, farm family members were by far the most frequent victims of animal-related accidents, with hired help and visitors accounting for less than 10 percent.

Livestock Handling Operations

Any operation involving restraint of an animal or sorting and loading is much less hazardous if solid facilities are provided. Makeshift gate arrangements and rope restraints can lead to injury of both the animal and the human worker.

Handling facilities deserve careful planning for efficiency as well as for safety. Animals will move more willingly through a chute if they cannot see excitement up ahead. Facility design should be such that it is never necessary for workers to enter a small or enclosed area with the animals. All holding pens should be equipped with a man-gate or other means of quickly vacating the pen if necessary. Crowding into sorting or working chutes can usually be done with crowd gates, not with drivers.

Catwalks along chutes and alleys eliminate the need for working in the alley. If the catwalk is more than 18" or so off the ground, it should be protected by a guard rail to prevent falls. Walking or working surfaces should be free of tripping and slipping hazards. Check for protrusions, sharp corners or pinch points that could cause injury and then eliminate them.

Head gates and squeeze chutes can be the scene of excessive animal excitement. Makeshift latches and levers can fly open inflicting serious injuries. Commercially designed and manufactured facilities at these key points can improve both efficiency and safety.

Here are more safety pointers: Lighting of facilities should be even and diffused. Bright spots mixed with shadows in alleys and crowding pens will often cause cattle to balk. Lighting in the squeeze and loading chute areas should be at least 10 footcandles. Guard the moving parts of a hydraulically operated squeeze chute and tilt table. Use solid panels for moving swine. Never prod animals if they have no place to go. As both cattle and hogs are very sensitive to noise, keep the decibel level down as low as possible.

Special Considerations

Each farm animal has its own set of safety considerations different from others, some of which are discussed in this section. For more information on accident prevention connected with any particular animal enterprise, contact your extension service.

Beef Cattle

Beef cattle are known for an even disposition. But when startled, they can inflict injury to anyone in their way. Groups of animals are easy to "spook." Bovines can see nearly 360° without moving their heads; therefore, a quick movement behind is just as apt to "set them off" as a frontal one. Small animals such as dogs tend to upset cattle and they are very sensitive to sudden or unexpected loud noises.

Although cattle are not apt to attack you, they can overwhelm you with their size and weight. Leave yourself an "out" when trying to corner or work with cattle. Keep small children and strangers out. Beware of the area in front of the rear leg when working with cattle. They tend to kick forward, then back. Pulling the kicking leg forward can be used as a means of preventing a kick while working in the udder or flank area.

Dairy Cattle

Milk cows may look contented in the pasture, but they are generally more nervous than other animals. Creatures of habit, they are easily startled, especially by strange noises and persons. Always announce your presence when approaching a cow. Gently touch the animal rather than let the first contact be a bump or shove. When moving cows into a constraining space such as a milking parlor stall or squeeze chute, give animals time to adjust before starting the work at hand.

If a cow tends to kick, consider using a hobble. Consider a squeeze chute and head gate as an investment in safety as well as efficiency. Don't permit workers to talk loudly, clatter and bang equipment around or handle cows roughly. Gentle cows can become dangerous when defending calves and this fact should be impressed on children, visitors and new workers. Special facilities should be provided so that a bull can be fed, watered, exercised and used for breeding without the dairy man coming into direct contact with him.

Swine

Hogs can bite with enough force to cause serious injury, and they pack enough weight to bowl people over or cause injury by stepping or laying on them.

Though normally docile, a sow will become aggressively protective if any of her offspring is hurt or threatened. Veterinary work and treatment of pigs should be done only when they are separated from the sow, or when she is restrained in the crate or separate pen.

Guiding hogs for sorting or moving to new quarters calls for patience and reasonably good facilities. Your best safety aid for these jobs is a lightweight hurdle or solid panel with a handle attached. The panel should be slightly narrower than the alleys through which the animals are being driven. A hog can be easily guided backwards by placing a basket or box over its head as it will try to back out of the basket.

As with most animals, make yourself known quietly and gently to avoid startling your hogs. A knock on the door or rattling the door handle will usually suffice. Don't let small children reach through pens or fences to pet or feed hogs, nor let them (and strangers) climb into pens or roam around hog lots .
Horses

Mechanical power spelled doom to the horse as the prime mover of agricultural implements. But he is a long way from extinction on the farm, and instead of a collar around his neck he has a saddle on his back.

Millions of Americans--rural and urban residents alike--enjoy horseback riding, and the horse is still a useful partner in many range and ranching operations. Unfortunately, many are injured--even killed--while riding or tending horses.

Basic general reminders include: have good equipment and maintain it; take good care of your horses and respect them, make sure a youngster can ride and handle a horse before turning him or her loose on it; only a skilled rider should mount a temperamental or high-spirited horse; and, ride with extra care when the going is rough or slippery, and among trees with low branches.

Safety with horses is too broad a subject to cover in this bulletin. There are many publications available that spell out these matters in much detail. Therefore, visits to your extension agent, library, dealers in riding equipment and horse supplies, local breeders and stables, and such should fulfill your information needs.

Sheep

A common accident involving sheep is being butted by a ram, which could be especially serious for a child or an elderly or handicapped person. Ewes will also protect their young and should be handled carefully.

A sheep can be immobilized for safe handling by sitting it up on its rump and tilted back enough to keep the rear hoofs off the ground.

Poultry

Chickens and other domesticated fowl are relatively harmless, though geese, gobblers and roosters could cause injury to small children or the elderly. Most of the hazard, then, lies with faulty or improper use of equipment, poor housekeeping and dusts in poultry facilities. If these things are properly tended to, accident and health risk is low.

Other Animals

Pets sometimes inflict injuries-- usually minor--on youngsters who mistreat or annoy them. But, children and intruders have been seriously hurt and even killed by dogs. Proper care and handling of pets can minimize the number and severity of pet-induced injuries.

Teach small children how to handle pets and to be kind to them.

If you have a guard dog or one with a cross or unreliable temper, keep it tied or confined to certain areas.

Wild animals native to your area should be avoided or approached in the proper manner as suggested by local wildlife authorities. Warn visitors to your place about any animal hazards.

Animal Diseases That Threaten Man

Animals, domesticated or wild, can be a source of human illness and parasite infestation. Such diseases transmitted between animals and man are often referred to as zoonoses.

Probably the animal-inflicted malady that inspires the most fear is rabies, a virus that attacks the nervous system. The saliva of an infected animal contains the deadly virus and comes to us through a bite or open sore or wound.

Because of vigorous anti-rabies programs and widespread inoculation of pets rabies is a rare disease. However, rural people are at greater risk than urban because of the proximity of wild animals and many free-roaming unvaccinated dogs and cats. Warn children about petting or feeding any animal acting abnormally. Have your family pets inoculated. Take immediate action if someone is bitten --try to capture the animal for examination by a veterinarian and seek prompt medical consultation.

Brucellosis or Bangs disease (called undulant fever in man) afflicts cattle, goats and swine. It can be transmitted from infected animals to man through raw milk, contact of an open sore or wound with an aborted fetus or after-birth, or from carcasses at the time of slaughter. Undulant fever is a severe and tenacious malady that you can avoid through good sanitation and management. Animals should

be tested regularly and removed if infected. Check with your state regulatory officials regarding vaccination.

Bovine tuberculosis is much less common today due to rigorous testing and elimination of infected animals. It still can be found in some areas or on farms where untested cows are kept to supply family needs. As bacteria are found in any body secretion or discharge, handling tubercular cattle is a health risk. Protective measures are regular testing and slaughter of those showing positive reaction, and pasteurization of family-consumed milk.

Trichinosis, caused by a tiny parasite, is a painful and sometimes fatal disease in man. Eating uncooked or partially cooked infested pork is how we get it. Thorough cooking of pork is the best prevention. Salmonella organisms are found in a variety of domestic and wild animals and poultry. Transmission to people occurs through contaminated food or water. The disease causes severe gastro-intestinal distress, fever and loss of appetite, and can be serious for the very young or old, or those with debilitating ailments. Prevention includes proper cooking and storage of animal-derived foodstuffs. Food handlers should keep their hands well washed.

The natural reservoir of tetanus organisms is the intestinal tract of animals, especially horses. The spores are introduced into a person's body by contamination of a wound with soil, street dust or fecal material. Tetanus is a horrible disease with a high fatality rate; therefore, all rural people should be immunized.

Leptospirosis in humans can be a serious ailment. Carriers include domestic animals, rats and wild rodents. It is passed from animal to animal or to people through contact with infected urine, or with soil, feed, water or other materials so contaminated. Once on a farm, the disease is difficult to eradicate.

Tularemia, often called rabbit fever, is usually acquired by handling wild rabbits (dead or alive) and eating imperfectly cooked contaminated meat. Though the disease is not usually lifethreatening, it is disabling and characterized by a high fever.

Other zoonoses that farm people should guard against include swine erysipelas, animal pox disease, ring worm, tape worm, newcastle disease, histoplasmosis, psittacosis (parrot fever), and insect-borne animal diseases such as spotted fever (ticks) and equine encephalitis (mosquitoes).

Your extension service and veterinarian can probably supply more information on these important health menaces that you should study and keep for reference. Here are a few general preventive measures:

Keep animal quarters clean.

Immunize animals and keep them free of parasites.

Quarantine or remove sick animals.

Don't unduly expose yourself to any sick animal.

Wear rubber gloves when treating sick animals or assisting at birth, and without fail if you have open sores or wounds on your hands and arms. Wash up and change clothing when finished.

Call your doctor if you become ill after contact with animals.

Personal Protective Equipment

The well-dressed livestock, dairy or poultry farmer should include several items of personal protective equipment in his wardrobe of work garb.

Bump caps can protect heads from the bumps and bruises bound to be theirs when working in and around livestock facilities.

Respirators have a place when cleaning up, handling dusty or moldy hay, working in silos and manure storage facilities, and for some pest control operations. Select the proper respirator for the job.

Safety eyewear can shield eyes from dust, chaff, chemicals, and flying pieces. Also, all prescription eye and sun glasses worn at work should have impact resistant lenses and sturdy frames.

Hand can be protected with several types of gloves including rubber ones to be worn when assisting birth or treating a sick animal.

Safety shoes should be standard equipment on any farm job. The metal toe cap and rugged soles can give some protection against animal hooves, dropped items and sharp objects. Skid-resistant soles will give better traction on wet, muddy or manure covered surfaces.

Facilities

Many of the injuries related to the care and handling of animals are inflicted by inanimate machines, tools or structures rather than by the living creatures themselves.

People fall or are hurt in and around lots, pens, chutes, barns, sheds, mows, milking parlors and while using weighing, sorting and restraining equipment. Rather than any fault of the animals, it involves sloppy housekeeping, poor lighting, defective or worn equipment, inexperience, improper footwear, inattention, haste and such.

Electric shock hazard is considerable in the wet or damp environment of barns, lots and milking parlors. Strains and dislocations can result from improper lifting of heavy objects and bags of feed or supplies. Concentrations of manure in pits, tanks or lagoons create dangerous gases (and a most unpleasant place into which to fall). Silos present a three-way danger--falls from silo ladders, poisoning or suffocation from silage gases or oxygen deficiency, and entanglement in filling or unloading equipment.

Faulty steps and flooring, also lack of handrails, are known causes of falls. Feed and grain storage places are sites of several accidents yearly to workers and sometimes children who climb inside and suffocate, "drown" or get drawn into the unloading mechanism. Feed sometimes "bridges" (a large airspace near the bottom) as it is drawn out, and could suddenly collapse from under someone on the top surface.

Electrical tools and equipment left plugged in with switches or controls operative and within reach of little hands present more hazard. Lack of guarding on materials handling equipment is a hazard to young and old alike as well as to the animals

Reduce the risk of injuries in and around your animal facilities:

Be a good housekeeper. Put things away after use. Keep aisles, steps and work areas free of clutter. Keep walking and working surfaces cleared of manure, mud, ice and grain spills. Sand or ag lime can be used to aid footing.

Keep facilities and equipment in good repair. Check out pens, chutes, stalls, fences, ramps and confinement devices. Make sure ladders, steps, flooring and such are sound.

Check out electrical system in buildings. Is it adequate for the load and properly grounded? Overloading or deterioration not only means lower productivity and inconvenience, but also added risk of fire and shock.

Is electrical barn machinery properly installed, grounded, maintained and shielded? Can equipment be locked out? Starting switches should be convenient and in full view of others who may be working in the area but yet out of easy reach of children. Lock out switches when working on equipment.

Keep power tools in good condition. Avoid using them while standing in water or mud. Unplug tools and put them away, especially if you have children or visitors.

Consider using ground fault interrupters (GFI) especially with equipment or power tools used in damp or wet places, and with stock water heaters. GFI's can be had in portable plug-in types or built into circuit breakers.

Never enter a sealed silo or manure facility without a self contained or supplied air breathing device. When agitating or pumping manure, open windows and doors and turn ventilating fans to maximum.

Never enter a grain or feed bin when unloading is in progress or could start. Lock out mechanical unloading auger power. Break bridges with a pole from outside the bin.

Store barn chemicals and pharmaceutical in a clean, cool, dry place where children and visitors cannot get to them.

Check all facilities for protruding nails, sharp edges and such.

Keep children out of animal quarters and work areas. Keep doors and gates closed. Dangerous areas could be locked if necessary to keep children and visitors out.

Heat lamps for brooding should be solidly supported and shielded,

Have a safety fence around a manure disposal lagoon.

Electric Fences

Numerous animal and some human deaths have occurred from the use of faulty or homemade electric fence controllers and other system components. Buy and use only controllers that are approved by a recognized testing agency such as Underwriters Laboratories . Install the system properly.

Have a Heart

Remember, animals have feelings, too. Just as we, they can suffer from hunger, thirst, fear, abuse, illness, and injury. Don't mistreat or neglect them, nor allow children or employees to abuse them. Respect and take good care of them and they'll do a better job for you.

Accident Case Analysis and Safety Countermeasures

Five states which conducted NSC's farm accident survey were able to supply 120 supplemental reports on animal-involved accident cases with more detail than in the regular accident reports.

The Farm Department analyzed these reports to get at some of the causes of animal-related mishaps and to help it formulate suggestions to aid in their prevention.

Accidents that occurred with some frequency were: kicked by a cow or horse; butted or struck by a ram, hog or bovine; bitten by a dog or hog; fell (or thrown) from a horse; dragged by a horse or bovine; limb or body caught between the animal and an object or surface; and, fell while chasing or tending animals.

Based on this animal accident analysis, the following safety measures would have prevented most of them:

- Use adequate restraining and handling facilities.
- Be calm and deliberate. Speak gently --do not startle animals.
- Leave yourself an "out" when working in close quarters. Work outside chutes.
- Stay clear of animals that are frightened, hurt, sick or look suspicious.
- Be alert for sudden movements, kicking, etc.
- Use extra caution around strange animals.
- Provide good footing for handling operations. Keep floors and ramps clean. (Floors in areas that are often wet and slippery should be made of rough textured concrete or other non-skid material.) Be extra cautious where slippery conditions are unavoidable.
- Provide training in livestock handling under controlled conditions for youth and other inexperienced workers.
- Entrust livestock handling jobs only to persons with adequate strength and experience.
- Wear protective footwear and headgear.
- Encourage moderate play activity around animals.
- Use extra caution while riding a horse on slippery or hazardous footing.
- Use extra caution around livestock with young.
- Never tie a lead line to your body or become entangled in the line.
- Check equipment carefully before riding a horse.
- Keep unneeded animals away from the work area.
- Assume that rodeo riding entails high risk of injury.
- Be alert to actions of animals nearby.
- Be patient with animals.
- Restrain known kickers and biters.
- Use extra caution with animals around crowds.
- Provide separate facilities for dairy bull.
- Use proper lifting techniques when handling livestock.
- Have enough help for the job at hand.
- Get enough rest.
- Don't allow children to approach strange animals.
- Don't lead an animal from a vehicle.
- Eliminate sharp edges and projections around livestock equipment and gates.
- Avoid "horseplay".